

Amendments to the Claims

Claim 1 (currently amended): An article comprising:

a sensor substrate including a non-porous adherent protective coating on a portion of a surface of the sensor substrate, the non-porous adherent protective coating protects the sensor substrate from corrosion by a fluid above 25°C in contact with the non-porous adherent protective coating, the non-porous adherent protective coating includes a fluorine containing poly-oligomer that is chemically bonded to the substrate surface of the sensor substrate, the non-porous adherent coating has a thickness of greater than 50 microns.

Claim 2 (currently amended): The article of claim 1 where the non-porous adherent coating protects the sensor substrate from corrosion by said fluid above [[25]] 50 °C.

Claim 3 (original): The article of claim 1 including an adhesion promoter.

Claim 4 (currently amended): The article of claim 1 where the non-porous adherent coating material includes fluorine containing poly-oligomers with alicyclic structures.

Claim 5 (currently amended): The article of claim 1 where the sensor substrate further includes ~~comprises a magnet, magnets, a sensing element, or a flow element~~ structures on one or more surfaces of the sensor, said structures chosen from the group consisting of resistive, capacitive, transistors, electrical contacts, optical contacts, or a combination of these.

Claim 6 (currently amended): The article of claim 1 wherein the substrate includes a rotatable shaft or a flexible member. the slope of a calibration curve for the sensor including said non-porous adherent protective coating and a slope of a calibration curve for a sensor without said non-porous adherent protective coating are nearly identical and have an offset of less than 0.2% full scale.

Claim 7 (currently amended): The article of claim 1 wherein the non-porous adherent coating has a thickness of more than ~~[[50]]~~ 100 microns.

Claims 8-15 (canceled)

Claim 16 (currently amended): A ~~article~~ coated sensor comprising:

a sensor with ~~an effective thickness of~~ a non-porous adherent coating on a surface of the sensor, said coating ~~[[that]]~~ contacts a fluid, said sensor with the non-porous adherent coating includes structures for measuring the physical response of the sensor in contact with the fluid, the non-porous adherent coating includes a fluorine containing poly-oligomer that is chemically bonded to the sensor surface, the non-porous adherent coating has a thickness of greater than 50 microns and said non-porous coating protects the sensor from corrosion above 25°C in the fluid.

Claim 17 (currently amended): The ~~article~~ coated sensor of claim 16 wherein the substrate includes structure for probing the sensor and structures for measuring the physical response of the sensor in contact with the fluid non-porous adherent coating is free of voids.

Claim 18 (currently amended): The ~~article~~ coated sensor of claim 16 where the sensor ~~substrate~~ is a pressure sensor and is a ceramic sensing material.

Claim 19 (currently amended): The ~~article~~ coated sensor of claim 16 where the sensor is temperature sensor, a flow sensor, a chemical purity sensor, a pressure sensor, or a combination of these.

Claim 20 (currently amended): The ~~article~~ coated sensor of claim 16 where the fluid is 10% HCl (pp. 32, [0088]) and the coating protects the ~~substrate~~ sensor from corrosion ~~above 25 °C~~ at 50 °C in said fluid.

Claim 21 (currently amended): A method comprising:

removing solvent from an amount of a bubble free coating material applied on a chemically bondable fluid contacting surface of a sensor substrate to form a non-porous ~~[[film]]~~ coating on the fluid contacting surface of said sensor substrate, the amount of said bubble free coating material including includes a solvent and soluble fluorine containing poly-oligomers, the fluorine containing poly-oligomers have reactive groups that chemically bond the poly-oligomer to the surface of the substrate, said non-porous coating on the fluid contacting surface of said sensor substrate has a thickness of greater than 50 microns.

Claim 22 (currently amended): The method of claim 21 where the non-porous ~~[[film]]~~ coating on the fluid contacting surface of said sensor substrate includes greater than 10% of the poly-oligomer in the amount of bubble free coating material applied to the surface of the substrate.

Claim 23 (currently amended): The method of claim 21 further including the act of curing the non-porous ~~film of the coating material on the chemically bondable fluid contacting surface of the substrate,~~ coating on the fluid contacting surface of said sensor substrate, the curing chemically bonds the reactive groups of the poly-oligomer to the chemically bondable fluid contacting surface of the sensor substrate to form an adherent non-porous coating on the chemically bondable fluid contacting surface of the sensor substrate.

Claim 24 (currently amended): The method of claim 21 wherein the chemically bondable fluid contacting surface of the substrate is a pressure sensor, a conduit, a housing, an element of a pump or a combination of these.

Claim 25 (currently amended): The method of claim 23 where the curing occurs at a temperature less than the boiling point of the ~~coating material~~ solvent and less than the Tg of poly-oligomer.

Claim 26 (currently amended): The method of claim 23 further including the act of increasing the temperature of the ~~[[film]]~~ non-porous coating on the fluid contacting surface of said sensor substrate up to a value greater than the boiling point of the solvent and greater than the Tg of the poly-oligomer material.

Claim 27 (currently amended): The method of claim 21 wherein said chemically bondable fluid contacting surface of the sensor substrate includes an organosilane that is capable of reacting with the fluorine containing poly-oligomers.

Claim 28 (original): The method of claim 21 where the solvent removal occurs in an antistatic environment.

Claim 29 (currently amended): The method of claim 21 where the amount of bubble free coating material applied on the chemically bondable fluid contacting surface of a sensor substrate includes an adhesion promoter.

Claim 30 (canceled).